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CARIES OF THE CERVICAL VERTEBRÆ.[1]

BY S. G. WEBBER, M. D.

CARIES of the cervical vertebræ is less frequent than that of the dorsal. It has, however, been my fortune to see several cases; the following is by far the most interesting, on account of its long duration, its apparently near approach to recovery, and its fatal termination.

The patient, three and a half years old when first seen, March 8, 1873, was placed under my care by Dr. E. H. Clarke. She had two brothers and one sister, all healthy except the younger brother, who had a very large head and had had convulsions. When about three or four months old she fell off the bed, but received no bruises. When about six months old she had diarrhœa, a purulent discharge from the ears, and three or four boils, being sick about four months; she then regained her strength and flesh. When she first began to walk, at about fourteen months of age, she held her head down and to the left side, the face not being turned to the left; later, the chin was allowed to drop on the chest; she would raise it for a short time and then drop it again. In the act of walking the left side was advanced slightly in front of the right. The patient walked strongly, and did not fall more than other children; she did not venture to climb like the others; there seemed to be timidity rather than weakness. When her hand was being washed, she drew it back as if she was hurt. She preferred to lie on her stomach; she made no complaint of pain, and did not seem to have headache. The discharge from the ears ceased before she began to walk.

When about two and a half years old she fell from a chair; soon after, in March, 1872, she seemed easily tired, was less inclined to walk, and preferred to lie on the bed. The inside of the right hand was noticed to be decidedly tender to touch, though not excessively so. Weakness of both arms and both legs slowly increased, till there was complete paralysis of the lower limbs, and almost complete paralysis of the upper. The legs were affected by spasms, becoming rigid; they were drawn up, and, if not supported, trembled when flexed. There

[1] Read before the Boston Society for Medical Improvement.

was no pain, nor tendency to rub or scratch any part as if in discomfort. There was strong resistance to any passive motion of the head, though it could be moved voluntarily.

When first seen the patient was lying on her back, not able to move her legs nor to turn over. The power of moving her upper extremities was very limited. Her hands were nearly useless; only very light and large objects could be held in one hand; most things were caught in a helpless way with both hands; small objects could not be held. The motions of the fore-arm and arm were nearly all retained, but were very weak.

Reflex action was exaggerated, both legs being forcibly drawn up on tickling the soles of the feet or on pinching the legs; she complained of pain when this was done. When the knee was bent and the foot was allowed to rest on the bed, the leg trembled very much unless it was supported. Sensation was preserved in both legs and arms, but to how great an extent could not be told, owing to the child's age. There was no tenderness over the spine. When the patient sat up it was necessary to support the back, which was much curved in the dorsal region; there was no other deformity in the spine. Her head fell forwards, and she complained of pain in her back; her respiration was then interfered with, seemingly from mechanical causes. The abdomen projected very much, the intestines being filled with gas.

The muscles of the legs responded to the faradic current, though somewhat sluggishly; the same was the case with those of the right arm; those of the left arm responded better. The bowels were rather costive, and the urine could not be retained long.

The child was taking iodide of sodium and cod-liver oil, and had had her neck painted with tincture of iodine. I ordered the iodide and oil to be continued, added phosphate of lime, and a blister one inch square to the back of the neck, to be repeated just below the first, after that had healed. An apparatus was applied which should keep the head nearly immovable.

Nearly three months after the child was first seen, it was recorded that she could move both legs at will in flexion and extension while lying on her back. Her father noticed that the return of power was gradual, and that at first the limbs were moved intermittingly; at times they were paralyzed, at other times they could be moved. Improvement was slow but constant.

About the middle of July the patient was sitting in a high chair, and was pulled over by her brother. She fell on him, bruising her forehead. Next day her mother noticed a swelling on the left side of the neck, about as large as a pigeon's egg. When I first saw her there had been a swelling on the left side, seemingly an enlarged gland. The swelling increased in size, and in two weeks was about as large as a turkey's egg,

filling the space between the clavicle and the scapula, and extending up the neck not quite to the lower jaw. There was no pulsation; fluctuation could be perceived over the carotid, and a murmur, synchronous with the pulse, could be heard over its anterior edge. The circumference of the neck over the tumor was twelve and one half inches. There was a slight tenderness over the fifth and sixth cervical vertebræ, and slight deformity; the position of the child's head had changed, and become quite characteristic by its set stiffness.

August 1, 1873. Dr. Hodges saw the child, diagnosticated the tumor to be pus from diseased vertebræ, and advised that it should be let alone for the present.

The next spring the child had whooping-cough, some of the paroxysms being very severe. When seen next, she could walk holding by her mother's hand, and could take a few steps alone. The swelling had increased in size, the neck measuring fourteen inches in circumference.

April 7, 1874. The swelling was slightly less in size, the neck being thirteen and one half inches in circumference; the abscess was slightly lobulated, was very movable, and seemed encysted; it resembled a fatty tumor. Dr. Hodges punctured it with the aspirator, and drew out about two ounces of pus. The abscess did not fill again, but the tract of the aspirator needle became fistulous.

May 25th. Dr. Hodges enlarged this opening and thoroughly evacuated the abscess; the contents were in large part concrete and cheesy. The cavity of the abscess filled up; it was firm and hard to touch, and gradually diminished in size.

November 4, 1874. Only a small, hard lump remained; the circumference of the neck was eleven inches. The child at that date walked firmly; her legs were well developed, the flesh was firm. Both legs were of the same size and length, but the motions of the right leg were a little less perfect than those of the left leg. The arms were not very strong, yet she could use her hands and fingers very well.

When I first saw the child I was chiefly interested in the diagnosis; my opinion was that there was caries of the fifth or sixth cervical vertebra. Paralysis of both legs in a child could be caused by disease of the spinal cord, of the base of the brain, or of both cerebral hemispheres; or it might be the result of so-called reflex paralysis, depending upon the disease of some other organ than the central nervous system. The diseases of the encephalon which might cause bilateral paralysis in a child are comparatively few; they must be either near the median line, as at the base, or multiple. Acute affections were excluded by the mode of origin and duration of the disease. There remain to be considered chronic hydrocephalus, multiple tumors or a single tumor at the base pressing upon both sides, and the possibility of some interstitial change, as sclerosis or granular degeneration, at the base.

Tubercular tumors are not infrequently multiple in children, and it is quite possible that bilateral paralysis might be caused by them. Yet the symptoms in such a case would differ essentially from those present in this case. The paralysis of the legs was complete, and greater than that of the arms, not the slightest voluntary motion being possible in the former. Such absolute loss of motion in the legs with the retention of so much power in the arms would scarcely be possible in case of tumors of the brain. Dr. West says the paralysis is often limited to the arm and hand, and invariably affects the upper more than the lower extremities. In cerebral tumors it is in the highest degree improbable that there should have been such entire freedom from all head symptoms. Such an absence of cerebral symptoms is of itself sufficient to exclude disease of the two hemispheres in cases of such absolute loss of control over the limbs.

The paralysis due to chronic hydrocephalus is accompanied with symptoms of cerebral disturbance which would scarcely admit of an error in diagnosis. In one case which I saw there were many symptoms resembling those of the present case; but there were also convulsions, vomiting, headache, strabismus, amaurosis, deformity of the head.

An organic change in the neighborhood of the pons Varolii or medulla oblongata might give rise to paralysis. The discharge from the ears would add to the likelihood of this. It seemed to me that the cause of the symptoms was below these points. There had been no convulsions, no vomiting. None of the nerves arising from the medulla oblongata were affected; the change in respiration seemed owing to mechanical obstruction rather than to loss of nervous influence, and there was no paralysis of the diaphragm. The only symptom present which could with certainty be referred to a higher origin than the fifth cervical nerve was the position of the head, inclined to one side and bent forward. This position of the head could be explained without supposing a lesion of the upper cervical nerves. For these reasons organic change situated so high seemed unlikely.

Again, the only changes likely to be met in so young a patient are abscess or tubercular disease. Tumors other than tubercular, and the more slowly developed consequences of a chronic interstitial change, are rare at so young an age.

As to so-called reflex paralysis, every organ seemed to be in perfect health, excepting the intestines. There was a great accumulation of gas in the intestines, with a proportionate distention of the abdomen, and constipation. But this condition arose subsequently to the other symptoms; it was rather the effect of the paralysis than the cause. There was nothing abnormal about the urine. Reflex paralysis would not have presented the earlier symptoms, tenderness of the hands and peculiar carriage of the head. It is very unusual to have all the limbs affected in reflex paralysis.

Of paralysis due to disease of the spinal cord, infantile paralysis was excluded by the mode of origin, which in that disease is sudden and acute, and by the fact that all the muscles reacted to the faradic current.

Apart from infantile paralysis, I do not recall any instances of myelitis of spontaneous origin in so young a patient. Dujardin Beaumetz[1] does not mention a case, and of twenty-eight cases in which the age is noted, none are mentioned below the age of ten years; between ten and thirty years twenty cases were noticed; the remaining eight occurred between the ages of thirty and seventy. All the cases under ten years of age are mentioned as infantile paralysis.

The history of this case excluded acute myelitis or meningitis, primary or secondary, as the spinal symptoms were developed very gradually. When six months old the child had diarrhœa, boils, a discharge from the ears; she was sick four months at this time, but she seemed to recover fully, and subsequently walked until she was two and a half years old, after which the paralysis was noticed, and in about ten months became complete in the lower extremities. Paralysis of spinal origin follows acute diseases as a result from changes in the spinal cord secondary to the acute disease. These cases may be more or less acute, or may be chronic. It is, however, not at all likely that in such an instance the paralysis would first appear in a marked degree as late as two years subsequently to the acute disease. Moreover, the symptoms of tenderness of the hands and the peculiarities noticed in the position and motions of the head are not found in paralysis after acute diseases.

Paralysis due to chronic changes in the cord, such as are found in the adult, is almost unknown in childhood. A tumor pressing upon the cord is also little likely to occur at such an early age.

Spondylarthrosis is essentially a disease of childhood. E. Leyden[2] describes the symptoms of this disease remarkably well. One of the earliest signs is pain; not pain at the seat of the disease, but along the course of the nerves and at the periphery. This pain is felt in the course of those nerves which have their origin from the part of the cord affected.

Another early symptom is the readiness with which the patients become tired, "so that they cannot run about nor stand long at a time;" the gait becomes unsteady and peculiar, from the contraction of muscles to steady the diseased vertebræ. Motor disturbance increases until the most complete paralysis may follow.

A frequent and valuable symptom is increased reflex irritability. Later, the limbs may be contracted, the leg being flexed on the thigh and the thigh on the pelvis. These contractions can be passively overcome, if at all, only by causing pain to the patient.

[1] De la myélite aigue. Paris. 1872.
[2] Klinik der Rückenmarks-krankheiten.

On reviewing the present case it will be seen that there are no symptoms inconsistent with vertebral caries; but, on the contrary, they are fully explained by such a lesion.

Not to dwell too long upon the various symptoms, it may be mentioned that in the earlier stage the peculiar position of the head, avoidance of such free motions as are required in climbing, tenderness of the hands, preference for the unnatural position on the stomach, are valuable as showing that the first fall at four months of age caused injury from which recovery was not complete.

After the second fall, at two and a half years of age, the symptoms were more marked. It is necessary to briefly enumerate only: the child seemed more easily tired, preferred to lie on the bed, and was disinclined to walk; the inside of the right hand was decidedly tender; passive motion of the head was strongly resisted; the arms and legs became gradually weak until they were in the condition in which I found her. The legs were affected by spasms, the reflex action being exaggerated. There was no tenderness over the spine, and no deformity except the bulging of the back, when she sat up, from paralysis of the muscles which retain the vertebral column erect.

As the nerves were compressed by the inflamed tissue around the intervertebral foramina, they were irritated; hence the hyperæsthesia. In an adult, who could tell of changes in sensation, we should hear of other abnormal sensations at the periphery. The head could still be moved on the healthy joints, the diseased joints being kept immovable; but when an effort was made at passive motion the inflamed joints would be moved as well as the healthy, hence the resistance to passive motion.

When I saw her first, the lower part of the cord was virtually cut off from the brain at the point of disease; hence the exaggerated reflex action. There was sufficient irritation of the cord to produce contraction, or there was change in the lateral columns. As she subsequently so fully recovered, the latter is not probable.

My diagnosis, then, of vertebral caries is justified by an analysis of the symptoms. The locality of the disease was evidently in the cervical region. There was no interference with the respiration, except mechanically when the head fell forwards; the diaphragm acted well; none of the cranial nerves were affected; deglutition was normal. The tenderness of the hand in the earlier stage would indicate that the disease was at the point of exit of the brachial plexus, probably not higher than the middle of the cervical enlargement. As all the muscles of the upper extremities were partially paralyzed, it must be that when I saw the child the whole or nearly the whole of the brachial plexus was involved. I thought, therefore, that the disease began at the level of the fifth or sixth cervical vertebra.

It is interesting to notice that there was no pain on pressure over the

diseased bone, and no deformity at the time of my first visit. It is not to be expected that in the earlier stages of Pott's disease there should be deformity, for until the vertebræ yield there can be none. In the early stages, moreover, the disease, being in the bodies of the vertebræ, is removed from the influence of pressure upon the spinous processes. The arch of the vertebra being healthy, and a large part of the body still unaffected, the pressure is upon healthy parts, and the diseased portions have not become so degenerated as to receive painful impressions from steady pressure. It might be that percussion would cause an aching.

After I saw her, she steadily improved; I believe the improvement commenced before an apparatus was procured. Supposing the pus from the diseased vertebræ pressed upon the cord, and hence caused the paralysis, when exit was obtained for the accumulation this pressure would be relieved. It was not until the pus had found its way into the loose tissues at the side of the neck that tenderness was noticed over the spine, and, about the same time, deformity. Then the bodies of the vertebræ yielded; yet the power of motion in the limbs steadily improved, showing that deformity of the vertebral column was not the cause of the paralysis. The paroxysms of the whooping-cough caused the tumor in the neck to increase quite rapidly in size; at the same time the motor power of the legs rapidly improved. It would seem as though the effort of coughing aided in expelling the pus.

I have spoken of compression of the cord from accumulation of pus in the vertebral canal. Of course I mean between the bone and the periosteal layer of the dura mater. This is only a supposition; compression is not always present in vertebral caries. From the nearly complete recovery, the commencement of which was followed by the appearance of pus at the side of the neck, it is probable that in this case some of the symptoms were due to compression by the pus; but generally these are caused by the irritation of morbid products or by inflammatory and other nutritive changes.

The amount of such change is not in proportion to the amount of compression. I believe there is no means of judging, clinically, as to how great the compression has been. We can conclude from the course of the symptoms only whether the progress of the secondary changes is rapid or slow.

The pus which found its way into the neck became encysted, and seemed to be cut off from the source of supply in the vertebræ. At the autopsy, no connection was found between the vertebræ and the seat of the abscess. Indeed, the results of the operation showed that the connection had been closed by nature. In view of this fact, and considering the subsequent recovery of motion and of strength, and the development of the legs and arms, it was reasonable to suppose that the disease had ceased to advance, and I confidently expected complete recovery.

In regard to the place at which the pus pointed. I have seen one other case similar to this. Leyden[1] describes the course taken by the pus. He says that in disease of the cervical region, as a rule, it passes down behind the longus colli muscles and appears at the posterior wall of the pharynx. In other cases, it sinks more to the lateral portion of the neck, and comes out at the sterno-mastoid above the clavicle, or finally, following the course of the brachial plexus, points in the axilla. The pus from the lower cervical and upper dorsal vertebræ has generally the longest course to follow. As the longitudinal ligament is thickened it presents an obstacle to the passage of the pus into the thoracic or abdominal cavities, and so it slowly settles down and appears under Poupart's ligament, having followed the femoral vessels.

The further history of my case is as follows.

In April, 1875, the patient had measles, with others of the family. The eruption was pretty well developed. She was under the care of a homœopath during this sickness. From her father I learned that the symptoms were mild until the eruption was fading from the face. Then there was pain in the head, alternating with pain in the stomach, and a condition of half stupor. The prominent symptoms were cries as if from pain, moaning, a tendency to sleep, pulse 130 to 136, respiration 53, slight spasm in the left hand, dilated pupils, flushed face. About the last of April the left arm was contracted, the right arm seemingly paralyzed; there was no motor disturbance of legs. There was much timidity, and the child would call out nervously to be laid lower or higher.

May 10, 1875. I found her in bed on her back, both arms drawn up about equally, the fingers of left hand used in rubbing her face, those of right hand not used. The pupils were both large, the iris responded feebly to light. Any motion of the head and coughing caused her to cry out. The left leg was drawn up, but could be easily straightened. There was no exaggerated reflex action on tickling the legs, but she cried out as if in pain. There was slight strabismus, which the father said had been more marked. Pulse 138. Respiration 27.

She remained very nearly in the same condition, temporarily improving, though finally becoming rather worse, her condition varying slightly from day to day. The cough was the most distressing symptom, because by its convulsive jar pain was caused. There was frequent vomiting.

During the early part of June she had attacks of vomiting; she cried out, became delirious, and rolled her eyes about. These attacks recurred regularly every fourth day. As she had been with the rest of the family in a part of the country where intermittent fever prevailed,

[1] Klinik der Ruckenmarks-krankheiten, i. 224. See also Otto Soltmann, Ausbreitungsbezirke der congestions Abscesse, Jahrbuch der Kinderheilkunde, 1874, page 267.

and as other members of the family had had chills and fever, I prescribed quinine. Twenty to thirty-six grains given the day before the expected attack modified it, but did not prevent its occurrence. In some of the attacks the face was drawn to the right, and between the attacks there was paralysis of the right side of the face.

June 12th. Dr. E. H. Clarke saw her in consultation, and advised to continue the quinine, and to increase the dose of iodide of sodium until ten grains were taken three times a day. The attacks of vomiting, with unconsciousness, continued to recur, though less severe than at first.

June 25th. Bromide of potassium was given, beginning with six grains three times a day, and rapidly increased to twelve grains. Subsequently the dose was reduced to ten grains, and then to eight. Soon after this, the vomiting ceased.

During the latter part of June the arms and legs became relaxed, and until death there was complete paralysis without contraction of all the extremities, and only the very slightest trembling on tickling the feet during the earlier months of that time, with occasional spontaneous twitching of the legs.

In the middle of July bed-sores formed; several began as blisters, then the cuticle came off and a slough was seen at the base. These formed on parts which were exposed to pressure for a short time only, or even where there seemed to have been no pressure. The nursing was admirable, and none of the bed-sores attained any large size. As fast, however, as one healed others formed. Towards the end of life there was an unnatural growth of hair on the limbs and on the labia.

Shortly after the middle of August she had attacks differing from previous ones, recurring at varying intervals. She exclaimed first, "Oh! oh! oh!" then there was profuse sweating, confined to the face and neck; after that the face and neck became mottled with red, resembling scarlatina eruption. There was no increase of drowsiness, nor any vomiting. Bathing the head with cold water seemed to cut these attacks short.

During the second week in September there was much dyspnœa, with coarse râles in the throat, and a pulse so rapid that it could not be counted. Respiration 50 to 66. The father thought she had taken cold. More stimulants were used. In about two weeks the child's condition was nearly the same as previous to this attack, and did not vary materially until death. About a week before she died there was a spasm of the facial muscles, and in the night in which she died the same was noticed again. Respiration was chiefly abdominal after the early part of July.

On October 10th the actual cautery was applied to the neck over the diseased vertebræ. After this the child seemed brighter, and the bed-sores healed rather more quickly. That, however, may have been in

consequence of quinine, which was given again in doses of two and three grains.

During the summer and fall, excepting when she had the attacks mentioned above, her intelligence was good. While taking large doses of bromide she was rather apathetic; but after the attack of dyspnœa in September she was very intelligent, noticed what was done in the room, responded to noises made in the house, and noticed what was said by her brothers and sister in the entry. She also repeated poetry she had learned previously.

The bowels were sluggish during most of the time, with only one or two periods of looseness. The urine was passed frequently, seemingly with pain; there was no accumulation in the bladder. For a while there was a rich deposit of urates and phosphates; they collected on the cloths and on the surface of the legs and genitals. I was in doubt as to how much of this might be due to the diet, which at that time was largely composed of beef-tea. The food was changed, more water was given to drink, and there was soon a change for the better.

December 20, 1875, she died. An autopsy was made about nine hours after death. There was great emaciation. Large parts of both lungs were collapsed, containing no air; portions cut from these parts sank in water. The kidneys, intestines, stomach, and liver seemed healthy. The heart was not examined.

On either side of the vertebral column in front was a small sac containing caseous pus, each about an inch and a half long and about three fourths of an inch wide, hanging down from the fifth or sixth cervical vertebra. At their upper limit these two sacs were united by a bridge of pus about half an inch wide, which took the place of the bodies of one or more degenerated vertebræ. There was considerable deformity of the vertebral column in the lower cervical region, the arches of the fourth and fifth cervical vertebræ falling forward. The arches of the fourth, fifth, sixth, and seventh cervical and of the first and second dorsal vertebræ were anchylosed one with the other. The bodies of the vertebræ were sawed through on the median line, and the laminæ were sawed just to the left of the spinous processes. On the left half the body of the third cervical vertebra was found to be much diseased, but clearly discernible; the intervertebral cartilage between the third and fourth vertebræ could also be seen. The bodies and cartilages of the fourth, fifth, sixth, and seventh cervical and of the first and second dorsal vertebræ could not be distinguished, and about half the body of the third dorsal was destroyed. The intervertebral foramina between the fourth and fifth, the fifth and sixth, and the sixth and seventh cervical vertebræ were united into one cloaca by the destruction of the pedicles of the respective vertebræ. The transverse processes of all the vertebræ were present. There was no bone betweenthe transverse process of

the sixth and seventh cervical vertebræ and the collection of pus. On the right the condition of the bodies was the same as in the left half. A few small loose pieces of bone remained embedded in the thickened pus. The transverse processes were all present, but those of the sixth and seventh cervical vertebræ were imperfect. The pedicles of the sixth and seventh vertebræ were represented only by pieces of bone disconnected with the rest of the vertebræ. The greatest amount of disease was at the level of the sixth and seventh cervical vertebræ. The bodies and pedicles of these two vertebræ had entirely disappeared; also the articulating process of the sixth with the fifth could not be clearly recognized on the right: it was at least in part diseased. This extensive destruction allowed the fifth vertebra to slide forwards. On the left, the articulating processes from the fourth cervical to the second dorsal vertebra were anchylosed. On the right, probably those of the fourth and fifth cervical vertebræ were anchylosed; also those of the seventh cervical and the first and second dorsal. The fifth cervical nerve was comparatively free, the intervertebral foramina through which the sixth and seventh cervical nerves passed were very much narrowed, and it would seem that those nerves must have been compressed. The first and second ribs were crowded together.

The canal was somewhat narrowed opposite the fifth cervical vertebra by the projection forward of the posterior portion of its arch.

The spinal cord was decidedly swollen in the region of the lumbar enlargement, and somewhat so above. It completely filled the vertebral canal at the level of the diseased vertebræ. At the level of the atlas, where divided, it was unusually firm, but to the naked eye showed no special change. The dura mater was firmly adherent to the pia mater throughout. In the dorsal region was a cavity occupying the locality of the central canal, and about one third the diameter of the cord. This cavity extended into the cervical enlargement, but not above; was not noticed in the lumbar enlargement. The cord below the cervical enlargement was abnormally soft. On examination in the fresh state, no nerve-fibres could be found in either the cervical or the lumbar enlargements.

Owing to lack of time the head was not examined.

No pus was found outside the two sacs above mentioned by the sides of the vertebral column.

There was no fatty nor granular change of the muscular fibres from the rectus femoris. The fibres were very narrow, most of them striated; many did not show transverse striæ, only longitudinal. There was no multiplication of nuclei in the sarcolemma.

Of the symptoms present after the measles, and subsequent to the acute attack of cerebral disturbance, nearly all can be explained by the disease in the cord. There were only a few distinctly marked head

symptoms. The paralysis of one side of the face was the most clearly defined of these. There were also sometimes delirium and unconsciousness. The strabismus might be called a cerebral symptom, but it is often reflex in children, and Dr. Charles S. Bull[1] mentions that he has seen strabismus in two cases of vertebral caries. As it was not constant in the present case, and at no time was very severe, it could not have been due to a permanent lesion of the sixth nerve.

The dilated pupils, sweating, flushed face, and rapid pulse were undoubtedly dependent upon lesion of the sympathetic. The vomiting might have been dependent upon irritation of the phrenic or of the sympathetic. The attacks which recurred every fourth day I considered at first to be intermittent in nature, but finding that quinine did not prevent them, I thought they might be epileptiform, and so gave the bromide of potassium, with benefit.

The spinal symptoms during the latter part of life were caused by meningitis and myelitis, not by compression. At first there was pain and contraction; later, when the conducting power of the cord was destroyed, entire loss of all motion, active or reflex.

GYNÆCOLOGICAL NOTES.

BY F. K. BAILEY, M. D., OF KNOXVILLE, TENN.

CASE I. *Imperforate Hymen.* — A girl of sanguine nervous temperament, fourteen years of age; large and stout, and of a good constitution. Had been in the vicinity a few months only, and it was ascertained that, although every month there had been symptoms of menstruation, yet "nothing had been seen." When summoned, I found the girl in intense agony, the pain referred to the pelvic regions and attended with bearing down efforts. Suspecting the cause, I made an ocular examination, and found, on separating the labia, a fluctuating tumor occupying the vaginal ostium. With the assistance of a medical gentleman who was called in to give his opinion, an opening was made in the middle line with a bistoury; there gushed out with considerable force, in a full stream, nearly a quart of a dark brown, almost inodorous fluid. The pain was relieved immediately.

Dark coagula continued to escape for several hours. A lotion of carbolized water was ordered, to be used freely, and at the end of five days there was still some discharge. At the close of another week, all discharge had ceased, and no further trouble was complained of.

In a month from the time of the operation, menstruation occurred normally, and no subsequent obstacle has presented.

The friends had noticed a slight enlargement of the lower abdomen

[1] American Journal of the Medical Sciences, July, 1875, page 60.

for some time previous to calling in medical advice, and it is probable, from the history of the case, that for months there had been a slow accumulation of menses, which the vagina had tolerated. When, however, it became necessary for the uterus to contain and store the accumulation from month to month, forbearance ceased, and expulsive efforts awakened attention and necessitated operative interference.

Case II. *Stricture of the Vagina.* — A few years ago I was invited by a medical friend to visit with him a lady, in whose case he desired both advice and assistance. I found a remarkably well-developed and intelligent young woman, not over twenty-two years of age. She had been married six weeks. The object which she had in calling a medical adviser was to be relieved of a condition of the ostium vaginæ which had rendered sexual connection impossible.

On examination, I found the external opening of the vagina to be narrowed so as not to admit the end of a finger. There was an intolerance of the least effort at digital manipulation, and an operation was decided upon at once. I administered chloroform, and after the patient was completely under its influence Dr. —— made a lateral incision upon each side, and at an angle of about 30° posteriorly. There was considerable hæmorrhage, as the parts were vascular and somewhat congested. The operation was performed at three P. M. and at nine P. M. a medium-sized rectal speculum was introduced, which caused some pain, but dilated the parts very effectually.

I will add some items in the personal history of this lady, which may be of interest. She menstruated at the age of eleven years, and became at once a sufferer from dysmenorrhœa, and also from a retention of the menstrual fluid within the vagina by the closure of the sphincter, which, though not complete, was sufficient to cause trouble. Moreover, at the menstrual periods she suffered from a "cramping" of the flexors of the toes. This was not confined to the period, but was induced by any unusual excitement; it was especially obvious after her marriage, upon any attempt at coitus.

Nothing has been heard from the parties since a short time after arriving home, when the accounts from the patient were entirely favorable. I will add that the contraction was so firm that the part resembled, on digital examination, the mouth of an India-rubber tube, one half-inch in diameter.

RECENT PROGRESS IN ANATOMY.[1]

BY THOMAS DWIGHT, JR., M. D.

TERMINAL ORGANS OF SENSORY NERVES.

As is well known, these are of three kinds: the terminal bulbs of Krause (*Endkolben*), the tactile bodies of Wagner and Meissner (*Tastkörperchen*), and the Pacinian bodies, besides those belonging to the nerves of special sense. The structure of the Pacinian bodies is the best understood, but even in these, as in the others, the ultimate termination of the nerve may be looked upon as rather doubtful.

Terminal Bulbs of Krause. — There has been much discussion concerning Krause's terminal bulbs in the conjunctiva, and some three years ago the question was investigated by Cicaccio and Waldeyer, who arrived at opposite results. Cicaccio found them, and described them very accurately in an excellent monograph on the conjunctiva, published in the Memoirs of the Academy of Bologna; but Waldeyer has till of late denied their existence. The work has been done again quite independently by Dr. Longworth,[2] of Cincinnati, in Waldeyer's laboratory, and by Professor Poncet,[3] at the Collége de France; and except in some points of lesser importance their results agree together, and with those of Cicaccio. To state the conclusions briefly, in man these organs are spherical or ovoid bodies filled by one or more nerves coiled and twisted into inextricable snarls; according to Poncet, these are imbedded in a granular substance containing large nuclei, of which those on the surface appear to be connected by a delicate membrane. Longworth points out that in the conjunctiva of the calf these bodies are very much more elongated than in that of man, and consist of a ground-substance that is either homogeneous or faintly granular, while in man it is made of nucleated cells pressed closely together and containing some fat-globules. He finds also that in the calf the nerve does not form a coil, but runs straight through the centre, and for these reasons he classes the elongated bulbs of the lower animal among the Pacinian bodies, and the round ones of man among the tactile corpuscles. In both kinds he finds two membranous sheaths, the inner of which comes from the sheath of Schwann, and the outer from the neurilemma; both contain nuclei which are much less distinct in man than in the lower animals. Waldeyer publishes at the end of Longworth's paper a supplement in which he vouches for its correctness, renounces his unbelief, and adds some observations of his own which are important if true. He states positively that the nerves, after subdividing in the corpuscle, end in the interior of individual cells.

[1] Concluded from page 244.

[2] Archiv für mikroskopische Anatomie, band xi., heft 4.

[3] Archives de Physiologie, Août et Septembre, 1875.

By the kindness of Dr. G. K. Sabine, I have been able to examine several very good specimens made by Dr. Sabine in Waldeyer's laboratory. After careful study with both low and high powers I am inclined to doubt the existence of more than one sheath, therein agreeing with Cicaccio and Poncet. I am unable to convince myself that the ground-substance is composed of cells, and can see no trace of Waldeyer's nerve terminations. After these studies, that agree entirely with those of other observers, it is hard to consider Figure 6 in Longworth's paper, which was apparently inserted by Waldeyer, as other than the diagram of a delusion. It should be stated that both osmic acid and gold chloride are useful for the demonstration of these organs; after using the former, another staining agent to color the nuclei is desirable. These bodies are not evenly distributed throughout the conjunctiva, but are found much the most plentifully in the upper and outer part.

Tactile Corpuscles. — Merkel's[1] discussion of these bodies is interesting in connection with what precedes. There are many points with regard to their structure which are far from settled; but it may be roughly stated that they are generally believed to be composed of masses of cells among which the nerves are lost, that these groups have either a true capsule or a peculiar arrangement of the connective tissue around them which amounts to the same thing, and that they may be subdivided by fibrous partitions so as to be simple and compound. Merkel goes further, and asserts that simple ones, and these he holds are not rare, consist each of a single cell. Then there are two cells together, and then more, and the larger the group the more obscure its structure, owing to its envelope. The cells themselves resemble in size and appearance the nerve-cells of the ganglia of the roots of the spinal nerves, and, what is most important of all, Merkel finds, and Waldeyer confirms it, that nerve-fibres run into the substance of the cells. Merkel's observations extend through a large number of animals. The tongues of swimming birds offer excellent specimens of solitary cells. These are found in the true mucous tissue below the epithelium; but in mammals they are nearer the surface, and may be found in the rete mucosum. Cells of this kind, with nerves entering them, are found in the sheath of the hair-roots, being best shown by sections parallel to the surface. In some places, as in the beak of a fowl, they are found in the mucous part of a papilla, in large numbers, but near together, without being collected into a compound corpuscle. Individual cells of this kind are found also in the rete mucosum of the human skin, but it is proper to state that it is only in some of the lower animals that the intimate relation of the nerve has been demonstrated.

Merkel divides the various cutaneous terminations of nerves into two

[1] Archiv für mikroskopische Anatomie, band xi., heft 4.

classes. The first consists of the simple cells and compound tactile corpuscles; in other words, of those in which the nerve is supposed to end in a cell; the second class consists of free endings, Pacinian bodies and Krause's bulbs. If it should be proved that Waldeyer is correct in asserting that nerves end in the cells of Krause's bulbs of the human conjunctiva, of course it will be necessary to place these bodies in the first of Merkel's classes. Merkel concludes his paper with the opinion that the free termination of nerves in the skin is for the perception of temperature, and the endings in cells are for the sense of touch.

Pacinian Bodies. — Professor Rudolf Arndt [1] has studied the development of these structures in the mesentery of fœtal cats and young kittens. He finds that they arise from the blood-vessels, and that it is not till they have made considerable progress that they have any relation with the nerves. It has already been discovered that in young animals they frequently contain capillaries. They first appear as prominences on the walls of the blood-vessels formed from the adventitia. They enlarge into knobs along the walls, and each contains a minute vessel which springs from the parent one. They are gradually detached, each hanging to the vessel by a pedicle containing the capillary. At about this stage, a nerve-fibre is found in their interior, which can soon be traced into a larger nerve, but it is to be noticed that the main nerve is not one in company with a blood-vessel but one that comes to it from a distance. In the course of time the nerve appears to draw the corpuscle away from the vessel, and the internal capillaries gradually disappear. Arndt is inclined to believe that these bodies are in some functional relation to the vaso-motor nerves; but, however plausible this theory may appear in regard to those in the mesentery, it is less so for the numerous ones found in the articular branches of the digital nerves.

SPLEEN.

Dr. Klein begins this very valuable paper [2] by alluding to the two opposite theories of the function of this organ, according to one of which red corpuscles are formed, and according to the other are destroyed, in the spleen. He inclines to the latter view, from the fact that pulp-cells are seen with red corpuscles in their interior, and because *débris* of hæmoglobin are frequently found.

He refers also to the disputed point whether the arteries and veins communicate by means of capillaries as elsewhere, or whether they open into a series of indefinite spaces. With the spleen of the dog, Klein's method consists in washing out the blood very thoroughly by injecting a one-half per cent. salt solution, next, injecting a one-tenth per cent. osmic-acid solution or simply Müller's fluid, and finally hard-

[1] Virchow's Archiv, band lxv., heft 1.

[2] Quarterly Journal of Microscopical Science, October, 1875.

ening the organ and staining with logwood. The human spleen is simply cut up and hardened in chromic acid. The matrix is found to consist of a series of honey-combed membranes partially inclosing irregular spaces through which the blood passes freely. The walls of these membranous partitions are in part formed of large, flattened cells resembling endothelium, and in other places they contain small, irregular nuclei. The most important discovery is that of many nucleated knobs projecting from the walls into the venous sinuses and showing signs of active growth. Klein believes these to be groups of white blood-corpuscles in process of formation; in time they break up into distinct individuals, which are carried off into the circulation. It will be remembered that some time ago he discovered an analogous origin of lymph-corpuscles from the endothelium of some serous membranes. But while the spleen is the cradle of the white corpuscles of the blood, it appears to be the grave of the red ones, which are devoured, if we may use the word, by the cells of the matrix. These two facts, for we think they may be accepted as such, and the demonstration of a system of sinuses instead of capillaries, are the chief results of this paper.

EXTRA-UTERINE PREGNANCY.[1]

This work is the result of a careful analysis of five hundred cases of extra-uterine pregnancy, made with a view of aiding the profession in undertaking the diagnosis and treatment of this accident. Medical literature contains, doubtless, the records of a very large number of cases of extra-uterine pregnancy, but the account of individual cases can throw but little light on the true nature, the causes, or the proper treatment of this deviation from a normal pregnancy. It is only by a careful study of a large number of such records that a satisfactory conclusion can be reached which will aid the practitioner in making out the diagnosis or conducting intelligently the treatment of future cases.

In this work Dr. Parry has added a most valuable contribution to obstetric literature, and one which meets a want long felt by those of the profession who have ever been called upon to deal with this class of cases.

THE AMERICAN OPHTHALMOLOGICAL SOCIETY.[2]

Some twelve years since, a foreign physician, who had recently emigrated to this country, and who claimed to possess a knowledge of ophthalmology,

[1] *Extra-Uterine Pregnancy: Its Causes, Species, Pathological Anatomy, Clinical History, Diagnosis, Prognosis, and Treatment.* By John S. Parry, M. D. Philadelphia: Henry C. Lea. 1876.

[2] *Transactions of the American Ophthalmological Society.* Eleventh Annual Meeting, Newport, July, 1875.

established himself in one of our leading cities, and started a monthly journal. Although devoted ostensibly to the interests of a department of science, it soon became evident that its real object was to advertise himself. This was the first appearance of an ophthalmic periodical in this country. England possessed at this time the Ophthalmic Hospital Reports, and Belgium the *Annales d'Oculistique*, while Germany took the lead of all, with Graefe's immortal *Archiv*, and later with Zehender's *Klinische Monatsblätter*. And so, rather than allow the American name to be disgraced by an adventurer's advertisement in the shape of a periodical claiming a scientific character, certain gentlemen of New York, Boston, and Philadelphia met one evening in January, 1864, in the former city, at the office of Dr. Henry D. Noyes, and discussed the policy of founding and conducting an American journal of ophthalmology. This had been the object of their coming together, but more intimate acquaintance with each other's views caused them to relinquish this project and to found instead a society that should hold an annual meeting. The first of these meetings took place in June of the same year, and Dr. Edward Delafield was elected president.

Time passed on; the offending publication lapsed into obscurity and finally expired, but the society grew and prospered, holding a meeting each year (except in 1872, when the London congress occurred), and gathering into its ranks the leading practitioners of ophthalmic surgery in the United States.

Commencing with a membership of twenty, it now numbers seventy-three. The successors of the venerable Delafield in the presidential chair have been Williams, of Boston, and Agnew, of New York. At an early meeting it was voted that no member of the society should attach to his name in any public announcement the title of oculist, or any similar title, or announce in print that he gives particular or exclusive attention to special practice. Expulsion has followed the infraction of this law, and an opposite course of conduct has more than once led to a denial of the privileges of membership.

The scientific contributions have been numerous and valuable. Prominent among them in importance the present writer would place the method of treating asthenopia not connected with hypermetropia, by Dr. Dyer, of Pittsburgh. "Morbid sensibility of the retina," as it had long been the practice to term it, was, up to eleven years ago, the opprobrium of our specialty. Young practitioners, fresh from their European studies, and beginning to acquire a local reputation, were dismayed at being confronted with patients of this class, who had long been the despair of their elder colleagues, and who presented a type of disease entirely new to them, and occurring with astonishing frequency, its symptoms being inability to support the continued use of the eyes on near objects, with normal refraction and accommodation, strong muscles, and often unimpaired health. To the study of this form of asthenopia Dr. Dyer devoted himself, and the result was his plan of treatment by gymnastic exercise of the eye, communicated to the society in 1865. The adoption of this method has resulted in so large a percentage of cures as to render the treatment of this form of asthenopia as great a pleasure as it was formerly a source of dread. To dwell at length on the work of the society is of course impossible at the present time, but we may allude, in passing, to the fact that one of its mem-

bers, Dr. Loring, of New York, originated the most practical ophthalmoscope now in use.

The present volume of Transactions is smaller than many of its predecessors. It most appropriately contains an excellent likeness of the late Dr. Edward Delafield. Reports of cases form the bulk of its contents; noteworthy among these are two instances of Basedow's disease, in each of which Dr. Williams, of Cincinnati, did Graefe's operation of closing the lids for half an inch at the outer commissure, to relieve the deforming exophthalmus. The first patient was in feeble health at the time. Destructive inflammation ensued, causing the loss of each eye, and some two weeks later death supervened. In the second case, the cornea became alarmingly affected, and vision was saved only by careful treatment. The pressure of the narrowed commissure, it is inferred, caused strangulation and inflammation. Dr. William Thomson, of Philadelphia, contributes a most interesting paper on the possible inducement of staphyloma posticum by astigmatism.

In print and paper this volume is much inferior to that of the past year. And the scattering of the business meetings through the book, instead of following the previous practice of bringing them together on the first few pages, will, if continued, lead to much inconvenience. H. D.

BROWN'S AIDS TO ANATOMY.[1]

This little book is a collection of descriptions of various regions of the body and of certain structures. In some ways it is ingenious, but the descriptions are not accurate, nor in all points correct. The author states that the object of the book is to place at the service of the student the "aids" that have been useful to him, and gives a warning against relying on it instead of on dissection. The book, however, is none the less what in college is called a "pony," and will be used, we fear, entirely for cramming. T. D., Jr.

PROCEEDINGS OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

JAMES R. CHADWICK, M. D., SECRETARY.

January 29, 1876. The President, Dr. H. W. Williams, in the chair.

Therapeutic Properties of Zinc Phosphide. — Dr. Pattee read a paper on this subject, in the course of which he recommended the use of the drug in neuralgia, spinal irritation, and other nervous diseases in which phosphorus is usually employed.

Difficult Labor; Cephalotripsy; Version; Death of the Mother. — Dr. W. W. Morland reported the case. Mrs. ——, an American, thirty years old, of short stature and nervous temperament, a subject of dyspepsia, expected to be confined, with her first child, about the middle of November, 1875.

[1] *Aids to Anatomy.* By George Brown, M. R. C. S., etc. London: Baillière, Tindall, and Cox. 1876.

Labor, however, did not come on until two o'clock on the morning of Sunday, the 9th of January, 1876. The patient had suffered, through the whole of her pregnancy, from dyspepsia and kindred annoyances, to a very unusual degree; distressing flatulence, with pain, hiccough, frequent nausea, and occasional vomiting, having defied nearly all remedial measures. She grew very thin and weak, in spite of all attempts to nourish and support her; and owing to the very large size of the abdomen (due, as I supposed, to abundant liquor amnii) the falling away of other parts was all the more noticeable.

About three weeks before her confinement, the liquor amnii began to be discharged, very freely at times; not only when she was walking or standing, but when quietly sitting, and even when recumbent. It was stated to me that it often ran, in a stream, upon the floor. This untoward occurrence naturally caused apprehensions of a tedious and difficult labor, and I advised as much quietude as possible, but did not obtain much, as the patient went about, and even out-of-doors, until a few days before her confinement.

I was sent for at six o'clock on the morning of Sunday, January 9th, and saw the patient — who lived at Boston Highlands — at about 7.45. Labor-pains were then strong and frequent, and, as previously stated, had been first felt about two o'clock in the morning.

On examination, I found the head presenting, the occiput slightly turned toward the left sacro-iliac synchondrosis. This position was expected, as it had been very easy to distinguish the different parts of the child some days previously, through the abdominal and uterine walls, facilitated as the examination was by the great loss of liquor amnii. The beat of the fœtal heart had also been distinctly heard, on several occasions, in the left iliac region.

The pains increased, and some progress of the head was noted, when the patient became clamorous for ether. This was administered, from time to time, until I found that it retarded and finally seemed absolutely to stop the pains, when of course it was suspended. The patient was extremely urgent for it, and would not be persuaded of the necessity for slackening or stopping its use.

At about four P. M., no advance of consequence having been made, and a degree of exhaustion being noticeable in the patient, I resolved to try the forceps, although the head was still rather high in the pelvis. Before proceeding to this measure, however, I sent a note to Dr. Cotting, requesting him to come and give his opinion as to its propriety and necessity. Dr. Cotting came promptly, and, after examination, advised entire withdrawal of the ether, some nutriment to the patient, who had taken almost nothing since the morning, — she had refused, indeed, even tea, — and further delay, until it could be seen how much unimpeded labor-pains might effect. This was accordingly done. After waiting from three and a half to four hours, and finding no change, — the pains having returned, — but only increasing exhaustion, I fully etherized the patient and tried the forceps. After considerable difficulty, on account of the high position of the head, they were satisfactorily applied, but no impression could be made; it seemed as though the child were glued to the uterus, and as if its body also met with some obstacle. At last the forceps slipped and came off. After three attempts, resulting in the same way, I sent again for Dr. Cotting, at about 9.45; he came, bringing his own forceps. His

experience was the same as mine. Turning was now suggested; but, on endeavoring to find a foot, it was discovered that an arm was in the way, which partially explained the difficulties. A loop of the cord had also descended, and was pulseless. Dr. Cotting succeeded in reaching a foot, and this was brought down, but extraction could not even then be effected. Alternate efforts were made by us, until our hands were nearly paralyzed. Then Dr. Cotting advised the use of the perforator, and opened the head. While reducing the head, careful tentative efforts were made with the crotchet; the hook being introduced into the foramen magnum, into the mouth, etc., by us both, but no advance of the child could be obtained. Room, nevertheless, having been secured, after considerable effort I was fortunate enough to reach and bring down the other foot, and, with strong traction, delivered the child. The shoulders were broad, and the pelvic spaces, although they were, as it proved, sufficient, could by no means be termed ample. Comparatively little blood was lost, not more certainly than in ordinary labors. The uterus contracted well and speedily expelled the placenta.

Dr. Edson, who, at Dr. Cotting's suggestion, had been sent for to assist us, arrived just as delivery was completed, and rendered invaluable aid in subsequent attention to the patient, now sinking from exhaustion and shock. Brandy and ammonia were given by the mouth, and brandy and beef-tea by the rectum, with heat to the feet, and other appropriate treatment, chiefly under Dr. Edson's supervision. A temporary rally took place, and consciousness returned, as the anæsthesia passed off; but the pulse became fluttering again, soon ceasing at the wrist, and death occurred without struggle in about one and a half hours after delivery.

The child weighed seven and a half pounds. Probably had craniotomy not been done, it would have weighed eight pounds.

Dr. Cotting testified to the accuracy of the above report, and dwelt at some length upon the unforeseen difficulties encountered.

Dr. Lyman expressed himself satisfied that everything had been done properly in the conduct of the case.

Dr. Chadwick commented upon the difficulty of determining the obstacle to the descent of the head in all instances. He had once seen a statement that, after the escape of the waters, the uterine fibres would sometimes contract so tightly about the child as to form an annular stricture wherever the circular fibres were not opposed — at the neck, for instance — by the child's body; such a contraction would of course interfere with the expulsion of the child. In view of the early escape of the waters, he thought that possibly this explanation might apply to the case under discussion.

Dr. Weeks expressed a doubt whether such a stricture could interfere with delivery. He favored the induction of premature delivery soon after the waters began to escape in the latter part of pregnancy.

Dr. A. B. Hall believed in waiting until the pains came on, even though delayed for two or three weeks.

Drs. Lyman, Harlow, and Eastman, all deprecated interference under such circumstances, citing cases in support of their opinions.

Dr. J. P. Reynolds approved of these opinions, calling attention to the

so-called false waters that occasionally escape at some time during pregnancy, and yet do not cause or necessitate premature delivery. With reference to stricture, he recalled a case in which Dr. Channing had been obliged to dilate the os uteri to allow the shoulders of the child to pass.

A Larynx affected with Croup was presented by Dr. C. P. Putnam. The patient was five years of age, and had been in good health until forty-eight hours before death. He had not been called in until twelve hours before death; the respiration was then 38, and noisy; there were no pulmonary signs, no struggle for breath, gasping, or lividity; the temperature was 103°–103.5°; the child was playing with toys up to the last hour. The treatment had been a moist atmosphere, emetics, and the application of ice to the throat.

Dr. J. B. S. Jackson had never seen a case of croup where the membrane was not found in the larynx as well as in the trachea.

Dr. Fitz pointed out that in this specimen the membrane was thickest in the larynx.

Dr. Weeks had had a patient with croup two years ago, who was suddenly strangled by spasm of the glottis.

Dr. Minot asked whether the case reported would have differed from one of diphtheria, and the mode of death from the one common to that disease, if the membrane had been seen to extend to the larynx and soft palate.

Dr. Putnam replied that the membrane here lay upon the mucous membrane, but was not intimately connected with it as in diphtheria.

Dr. J. B. S. Jackson said that in cases of croup he had always found the membrane apparently incorporated with the mucous membrane in the larynx, but in the trachea and bronchi it could be very readily detached, the membrane beneath often appearing to the eye perfectly healthy.

Dr. H. I. Bowditch cited, in illustration of an important point in practice, a case in which he had summoned Dr. John C. Warren to perform tracheotomy; on reaching the house they were told that the child had just died; the trachea was nevertheless at once opened and the child revived, though he ultimately succumbed to the disease.

Dr. Bradford related a case of Dr. Monti, in Vienna, where, after apparent death, a catheter was introduced into the trachea, artificial respiration established, and the patient saved.

Dr. Reynolds mentioned an instance where four individuals had diphtheria after attending the funeral of a person who had died of that disease, and asked whether, on such occasions, it was a physician's duty to give warning of the danger.

Dr. Fitz said that we had impressions only about this subject, and moved that a committee be appointed to investigate it. This motion having been adopted, the chair appointed Drs. Bowditch, Fitz, Bradford, C. P. Putnam, and F. C. Shattuck.

A communication from the Boston Society of Civil Engineers was read, inviting the Suffolk District Medical Society to take measures for the purpose of promoting the adoption of the metric system of weights and measures in this country. On motion of the secretary, a committee was appointed to report at the next meeting.

AMERICAN MEDICAL JOURNALS.

We have noticed with much interest, of late, signs of a realizing sense among our contemporaries of the present standing of American periodical medical literature. Dr. Gross has given a brief sketch of our medical journals in a recent address delivered at the Jefferson Medical College. He estimates that the present number of these periodicals cannot be much short of one hundred. Excluding, however, a great number of publications which, strictly speaking, would not be classified as medical journals, we may safely say that the number is not far from sixty. When we remember that the history of this department of our literature does not extend further back than the beginning of the present century, and the additions to the list which are yearly recorded, the question may well be asked, Is this rapid development a gain in any way to medical science and literature, or are there other motives than the advancement of these objects at the root of this remarkable activity? and what prospect does the present plan upon which most of our journals are conducted offer for the future? A glance at our past history is certainly not very reassuring, if, as we fear, history promises to repeat itself. *The Richmond and Louisville Medical Journal* is our authority for the statement that "at least twenty medical journals originated and published in the South and West since the war have, after a life of painful disaster, finally succumbed." Of those at present in existence there are but two which can look back half a century, and there are certainly very few which can count a score of volumes. A large part of them, as Dr. Gross truly says, lie uncut and unread upon the library shelves. No one will, we presume, doubt that there is ability enough in the country to create a literature of the highest class. What are, then, the causes of these exuberant but unfruitful productions?

A glance at the list of our present periodical publications will show a peculiarity which is in marked contrast to those of other countries. Each separate medical community, however diminutive in proportions, is usually provided with a journal of its own. Most medical schools, particularly those whose qualifications for their work are of an uncertain character, consider an "organ" a necessity. The result is a series of journals of purely local character, whose very names, in the majority of cases, are unknown beyond the moderate limits of their circulation. Our basis of classification may be considered rather geographical than scientific or literary. Indeed, the latter qualifications appear to be quite secondary to local interests. No sooner is the "organ" fairly established than rival interests feel the need of protection, and an opposition journal springs into existence. The small stock of material which a busy community can muster can be divided between the two, and the gaps are filled with a large amount of borrowed plumage, while editorial space is devoted to a petty warfare from which the cause of medicine receives but little benefit.

In our large cities the publishers' interests are of paramount importance. Quantity and not quality is the desideratum. In New York, a city abundantly able to support two or three journals equal if not superior to those of any other country, medical periodicals spring up like weeds in a garden. It is possi-

ble that the productions of the enterprising publishing firm may be more effectually disseminated in this way, but one cannot help feeling how much more creditable to the profession it would be to concentrate these diluted energies and divide the large sums of money annually subscribed for periodical literature among a few journals, which, properly distributed, might represent in just proportion the different sections of the country, and at the same time maintain a standard of which we should all be proud. The work of conducting them would be taken from the hands of amateurs and placed under the care of men whose experience or abilities particularly qualified them for a sphere in which they would become experts. Every physician would be sure of getting something for his money, the various interests would without doubt profit by the change, and last, but not least, the present rivalry of factions would be replaced by a more generous and profitable one, which could not fail to impart a higher tone to our medical literature.

THE VITAL STATISTICS OF PROVIDENCE.

The twentieth annual Report of the Vital Statistics of the city of Providence has just appeared. We find in it many interesting facts and deductions with reference to the registration of births, marriages, and deaths in that city in 1874; it adds another to the long list of carefully compiled reports from the hands of the widely-known registrar, Dr. Snow, whose work in this department of state medicine is recognized as a model to be emulated.

The proportion of births to population in Providence in 1874 was one to 34.69 persons. Most of the births occurred in the latter half of the year, the last quarter having a marked excess. There were 102.63 males to every 100 females. The percentages of foreign, of native, and of mixed parentage are very nearly the same as have been found in Massachusetts, the foreign births being in excess in both cases. There were twenty-eight mothers who had eleven children each, thirteen who bore twelve, one who bore thirteen, and one who bore fourteen. In the last twenty years there have been ten women each of whom had fifteen children, three who gave birth to sixteen, five who bore seventeen, and four who bore nineteen. The nativity of these prolific matrons is not given. In the twenty years there has been an average of 3.42 children born in the life-time of each mother. In 1874, the woman who bore the family of thirteen children had her thirteenth child at the age of thirty-one; and the one who had fourteen was thirty-four years old at the time of her last labor. One girl had her first child when fourteen years old, and three girls of fifteen became mothers for the first time. One girl of eighteen was the mother of three children. The ratio of marriages to population was less than usual in 1874. Fifty-five per cent. of the marriages were of American grooms and brides. Four marriages were solemnized according to Mormon rites.

The death-rate in 1874 was 20.6 in every thousand of the living population or one death to every 48.54 persons. The average age at death of American decedents was 31.17 years, of those of foreign parentage 22.51; the excess of infant mortality in the foreign population will account in part for this disparity. Of those of American parentage who died, 19.10 per cent. were under

one year old, and 34.02 were under five years old; the percentages for those of foreign parentage were 21.14 and 43.55, respectively. The total infant mortality, regardless of nationality, was 20.23 per cent. of the whole number of deaths, and the deaths of children under five years old comprised 39.31 per cent. of the entire mortality — a significant expression of the loss, much of it preventable loss, of young lives. Among the causes of death, consumption and scarlatina are conspicuous, cholera infantum and pneumonia standing next. It is encouraging to note the apparent gradual diminution in the mortality from consumption during the last thirty-five years. Scarlatina was unusually prevalent and fatal in 1874. There were no deaths from small-pox.

The study of vital statistics does not offer great attractions, except to those whose tastes incline thereto; we can assure all our readers, however, whether they are specially interested in statistical investigations or not, that they will find in these reports on the births, marriages, and deaths of Providence a remarkably clear and useful presentation of facts touching human life in the matter of its reproduction and decay.

MEDICAL NOTES.

— "A correspondent," says *The Lancet*, "after a recent visit to the Villa Casalini writes thus of its illustrious inmate: 'General Garibaldi has rather retrograded from the improved health to which the sulphur baths of Civita Vecchia brought him. The arthritic pains have returned with such intensity that for some days he has been confined to bed. His medical advisers ascribe the relapse to the anxiety he has undergone during the consideration and rejection of his Tiber scheme by the government commission, and to the increased labor he has imposed upon himself in vindicating its merits. In laboring for the health of the community, it is but too characteristic of him to sacrifice his own.'"

— The use of liquor bismuthi for hæmorrhoids and prolapsus ani is recommended in *The Practitioner* for January, 1876, by John Cleland, M. D., F. R. S. It is recommended that the patient with hæmorrhoids mix a dessertspoonful of liquor bismuthi with half a wineglassful of starch, and, after getting into bed and returning the bowel into its place, introduce this enema and retain it. Dr. Cleland states that in instances in which the necessity for surgical interference seemed indubitable an operation has been avoided, and his patient has recovered under the use of the injections.

— The Paris correspondent of *The Medical Times and Gazette* of February 12, 1876, reports the removal, by M. Tillaux, of a cherry-stone which had been in the nostril of a woman for twenty years. Before presenting herself at the Lariboisière Hospital the patient had gone the rounds of the hospitals and a host of private practitioners, without any one having detected the presence of the body in the nostril. The consequence was that she was treated for ozæna, which, of course, was the prominent symptom. But all were mistaken as to its real cause. Some looked upon it as a scrofulous rhinorrhœa, while others put it down to the syphilitic taint, and the patient was submitted to

the treatment generally adopted in one or other of these affections. M. Tillaux had fallen into the same error, and although there was no other sign of syphilis or scrofula, he gave the patient the benefit of the doubt, being convinced that if she was not scrofulous she must be syphilitic, and she was accordingly subjected to the specific treatment for syphilis. The patient had been nearly six months in hospital, undergoing this treatment without any improvement in her condition. From time to time M. Tillaux examined the nostril with a probe and felt the foreign body, which he mistook for dead bone. Eventually, the foreign body became movable, and its extraction with a pair of dressing forceps was accomplished. The instrument brought away a body about the size of a large pea, as black as coal, of an irregular shape, and of a most offensive odor. On cutting it open, it was found to be a common cherry-stone. The patient denied that she could account for its presence in the nostril. She left the hospital a week after the operation with her nose as well as if nothing had happened to it.

— Dr. John Vite reports to *The Richmond and Louisville Medical Journal* of February, 1876, the case of a man "who lived four days with a knife-wound penetrating into the pericardial sac, and passing through the left ventricle of the heart into the opposite wall." The patient, a colored man aged twenty-five years, was admitted into the St. Louis City Hospital, September 29, 1870, at two o'clock P. M., with a knife-wound in the left breast, about one and one half inches below the left nipple, and three fourths of an inch towards the median line, entering between the fourth and fifth ribs, at the junction of the ribs and costo-sternal cartilage, the opening being about one half an inch in length and nearly perpendicular. There was no perceptible hæmorrhage at the time of the patient's admission, although he had previously bled quite freely. His pulse was scarcely perceptible, his respiration was hurried, and he presented a comatose condition, being unable to articulate. An hour later, his condition had improved, and the next morning, at the time of the hospital visit, he was dressed and sitting at the side of the bed, feeling, as he stated, quite well. There was no external hæmorrhage, the pulse was full and regular at 120, and there was no complaint of pain. He wished to walk about the ward, but was ordered to bed.

There was no marked change till October 3d, the fourth day from admission, when the patient was found, at eight A. M., breathing hurriedly and with great difficulty. He died at noon, almost exactly four days from the time of the accident.

The post-mortem examination showed the pericardium filled with blood, and a coagulated clot of blood at the apex of the heart. The left thoracic cavity was also filled with blood, amounting to about six quarts; the left lung was collapsed, but was uninjured by the knife. The heart was pierced to the left of the septum about one inch from the apex, the wound extending through the left ventricle into the opposite wall, and almost passing through that also. An "exudation membrane" was found to completely envelop the heart, which, with the clot above mentioned, seemed to close the wound and thereby prevent further hæmorrhage. The muscular substance of the heart was much softened, showing clearly, the reporter thinks, that death was caused from carditis, ac-

companied with pericarditis. Dr. Vite asks if there would not have been a possibility of saving his patient's life, if his condition could have been known, by performing paracentesis thoracis immediately upon his arrival at the hospital.

— Dr. M. F. Coomes, in the *Louisville Medical News* of January 15, 1876, recommends the bromide of potassium, in powder or saturated solution, in the treatment of nasal catarrh where there is a dry condition of the membrane. In hypertrophy of the membrane lining the nasal cavities, with an insufficient amount of the normal secretions, a condition met with in proliferous inflammations of the membrane, insufflations of the powdered bromide or injections of the saturated solution produce excellent results. By its use the secretions of the membrane are increased, congestion lessened, and a marked reduction in the hypertrophied tissues. Its immediate effects in these cases of proliferous inflammation of the nasal cavities is to relieve the patient of that sense of "stuffiness" which is almost always complained of. The bromide is also of value as a local agent in the treatment of throat affections. In cases of acute tonsillitis and pharyngitis, it matters not whether in their incipiency or in the advanced stages, a solution of the bromide of potassium, sixty grains to the ounce of water, applied with a mop or with an atomizer every hour or two, will be found to produce well-nigh complete relief. In cases of ulceration the open sore should be touched with carbolic acid or nitrate of silver. In but few cases will it be necessary to apply the escharotic a second time. Under this plan of treatment all the painful and distressing symptoms that attend such cases speedily disappear.

COTTAGE HOSPITALS.

Messrs. Editors, — The approving notice of our unpretending hospital, that appeared in the last issue of the Journal, leads me to think it would not be without interest, in this Centennial year, to know how many hospitals, large and small, there are in that portion of this country which lies east of the Mississippi and north of the Potomac and Ohio. The population of this territory is about the same as that of England, namely, in the vicinity of twenty-two millions.

Now, in 1873 there were three hundred and seventy hospitals and infirmaries proper in England, and of these, one hundred and nine did not contain over twelve beds each. Of this number, forty-one were either general or special hospitals,— the latter embracing orthopædic, skin, lying-in, etc. Separate mention should be made of the ophthalmic hospitals, of which there were thirteen. One of these contained but two beds! Some of these charities were founded many years back, and, as a general rule, in the larger towns.

A decade or so previously, or during our civil war, owing to the "activity of the medical profession," or to the efforts of the ladies and the clergy, the erection of "cottage hospitals" was begun, so that at the date given above there were fifty-five in use (a few being called "rural" and "village") in as many boroughs and villages. The number of beds in the different hospitals varied

from three to twelve or more, but the average was six. In a hospital having six beds, forty-six in-patients were treated in the preceding year from a hamlet of thirteen hundred and twenty-two inhabitants. In another hospital of the same size, in a village of thirty-six hundred inhabitants, but twenty patients were received. In a village of fifty-five hundred inhabitants, sixty-eight patients were treated in a hospital of seven beds in one year. It appears that some of these institutions are founded and cherished by persons of station and wealth.

Several years ago, the Rev. Bryant Burgess, Honorable Secretary of the Cottage Hospital at Chesham, Bucks, then just completed, very kindly sent to me an accurately drawn scale-plan of the hospital. The plan resembles a ⊤. Two wards, each arranged for three beds and separated by the matron's room, are in the horizontal part. At the top of the vertical part is a hall, and, lower down, the nurse's and operating rooms, the kitchen, bath-room, etc. The water-closets are well isolated, and the beds are situated between windows, with a view to the treatment of fever cases. There are numerous bow-windows, verandas, and other architectural helps, that must make the little hospital attractive.

Though the plan is more elaborate than could well be carried out here in a community of six thousand persons, permit me to quote from a letter received from the honorable secretary: "With certain extras it cost £874. It is entirely on one floor; there is no staircase. All the beds and furniture were given by persons in Chesham. I am happy to say that it is working most satisfactorily, and is greatly valued by the poor."

So much for England. It may be assumed, perhaps, that Massachusetts is as well provided with hospitals in proportion to our population as is any one of our States. How well provided are we? There are over forty cities and towns within the commonwealth in each of which the population exceeds six thousand. So far as I know, but six of these sustain a hospital! What is true as regards the deficiency of hospitals in this State is doubtless true of other States.

The remedy rests with the medical men. If they will help celebrate this year by soliciting funds from their wealthy patients in aid of "cottage" or other hospitals (as was done in Salem with such signal success), by the 31st of December many new hospitals will be in operation all over the country. When the laity learn that a hospital is to be established, they are pretty sure to become interested in it and to make pecuniary and other contributions. To start a hospital in a modest way requires no great expenditure of effort or money. Without waiting for a fund, a small house can be rented and a few beds made up, a matron and a maid secured (relying on the "chore-man" for necessary help in the wards), and the hospital is ready! Managed in this way, the annual expense of running it will not vary much from that of a well-conducted family — say from $1500 to $2500. This is met in a measure by the money received from paying patients, by that allowed by the State for patients of foreign birth who have no "residence" and who may be too ill to be taken to a State alms-house, and by the amounts paid by towns for patients having a claim upon them.

In conclusion, I do not purpose speaking of the advantages of having a hospital in every sizable town, as they must be apparent to all of your readers. The subject is one of interest, and if it is sufficiently agitated by physicians, it ought to lead to the same results in this country that we are permitted to see in England. Very respectfully, DAVID COGGIN.

SALEM, *February* 28, 1876.

ELECTROLYSIS AGAIN.

MESSRS. EDITORS, — In your issue of February 24, 1876, page 212, line 24, occurs this passage: "Unfortunately, Dr. Cutter has not mentioned the number of his fatal cases, nor the symptoms in such cases which might assist in forming a judgment as to the causes of failure and be a guide against future accidents."

Allow me to say unequivocally, I have never had nor seen any fatal case of electrolysis of uterine fibroids. Of course I could not mention any fatal case of my own knowledge.

Dr. G. Kimball has had one case, that of a feeble, sickly person, who the next day after the operation exposed herself by walking out in a hall. This exposure was followed by chills and typhoid symptoms. Death ensued in three weeks. It may be a question whether the operation or her own imprudence killed the patient.

I wish to say here, also, that if Dr. Webber or any one else has got or can get up any battery for this purpose better than mine, I shall be thankful. God sometimes gives new ideas to men of humble station in the profession.

Respectfully, E. CUTTER.

CAMBRIDGE, *February* 25, 1876.

"HÆRET LATERI LETHALIS ARUNDO."

MESSRS. EDITORS, — An accident occurred to one of my patients recently which is probably unique, and therefore I send you a brief report of it for insertion in the JOURNAL. It is a case of impalement upon an "ice-pick."

J. T., a boy seven years of age, was playing with the implement mentioned (a truly innocent and appropriate plaything for small children), when he fell upon it in such a way that it penetrated his body about an inch above and to the right of the penis, passed downward obliquely to the left, entirely through the scrotum, emerging a little above the left testicle somewhat posteriorly to a vertical line drawn through it, then penetrated the left thigh about half an inch behind the femoral artery, and was arrested by the femur! The little patient pulled this savage weapon out with his own hands, and started to walk home, bleeding profusely meanwhile; he soon fainted, however, and was picked up and carried in by a policeman.

On my arrival the hæmorrhage (which, judging from the appearance of his clothing and from other evidence, must have exceeded eight ounces) had nearly ceased. The boy had fainted a second time, was blanched and exceedingly prostrated. I administered stimulants, applied adhesive plaster to the wounds,

gave an anodyne to relieve pain, enjoined perfect rest, and left the patient. A line drawn from the wound of entrance to that of exit from the scrotum would pass directly through the urethra, and fearing that it was lacerated I anticipated trouble from that source. Much to my surprise, on visiting the patient some hours later I found that he had passed, with little pain or difficulty, about six ounces of clear, normal urine, and that there was scarcely any swelling, except of the thigh. The urethra was evidently intact, the tunica vaginalis had escaped injury, and there was almost no extravasation of fluid into the tissues. The femoral artery had barely escaped puncture. The boy made a rapid and perfect recovery.

The "pick" was fifteen inches in length and about one third of an inch in diameter, not very sharp, but very rusty and rough.

I think it unlikely that such a wound could be repeated, with such an instrument, at a single thrust, intentionally or otherwise, among those delicate structures, without more serious results. J. O. MARBLE.

WORCESTER, *January* 27, 1876.

COMPARATIVE MORTALITY-RATES FOR THE WEEK ENDING FEB. 26, 1876.

	Estimated Population.	Total Mortality for the Week.	Annual Death-Rate per 1000 during Week.
New York	1,060,000	599	29
Philadelphia	800,000	358	23
Brooklyn	500,000	242	25
Boston	342,000	153	23
Providence	100,700	29	15
Worcester	50,000	13	14
Lowell	50,000	13	14
Cambridge	48,000	22	24
Fall River	45,000	13	15
Lawrence	35,000	5	7
Lynn	33,000	15	24
Springfield	31,000	8	13
Salem	26,000	3	6

Normal Death-Rate, 17 per 1000.

BOOKS AND PAMPHLETS RECEIVED. — On Alcohol. By Benjamin W. Richardson, M. A., M. D., F. R. S. New York: The National Temperance Society and Publication House. 1876.

Extract from the Ninth Annual Report of the State Board of Charities of the State of New York, relating to the Sanitary Condition of Towns. Albany. 1876.

Remarks on Intra-Uterine Polypi. By A. Reeves Jackson, M. D. Reprinted from the Chicago Medical Journal and Examiner. Chicago. 1876.

A Series of American Clinical Lectures. The Principle of Physiological Antagonism as applied to the Treatment of the Febrile State. By Roberts Bartholow, M. A., M. D. New York: G. P. Putnam's Sons. 1876.

AT a recent meeting of the Trustees of the Massachusetts General Hospital, Dr. Algernon Coolidge, having resigned the position of visiting surgeon, was appointed consulting surgeon; Dr. J. Collins Warren was appointed visiting surgeon, and Dr. John Homans surgeon to out-patients.